

# The Impact of Public Investment in Early Childhood Education on Income Distribution and Development

Presentation made at the “Development with Equitable Income Distribution” conference held  
April 5-6, 2006, Rua Ministro Godoi, 310 – Perdizes - Sao Paulo, Brazil

Conference Sponsored by the *Departamento Intersindical De Estatística E Estudos  
Socioeconomicos* (DIEESE: Inter-Union Association for Statistics and Socio-Economic Studies)

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Good morning. I am delighted to be here in Brazil, a country which has contributed so much to the world in terms of culture, politics, and economics. I want to thank *DIEESE* for inviting me and organizing this conference. The theme of this conference -- how to promote development with equitable income distribution -- is unquestionably one of the most important economic and ethical questions confronting us and I congratulate you for addressing this problem.

Today, I will summarize for you what the research in the United States tells us about the effects on development and income distribution of public investment in Early Childhood Education programs. But, before I do so I want to make a few general points.

I have had the good fortune to live outside of the United States for about 15 years. During those years I lived abroad, I frequently had the opportunity to hear lectures given by visiting American scholars. Too often, these visiting American scholars would ignorantly tell their hosts how they should run some aspect of their economy, even though they had little understanding of the politics, culture, and economics of the country they were visiting.

And now, here I am giving a talk in Brazil, a country about which I am not an expert. So, I want to make clear, that I will describe for you some of the findings of my research as it applies in the United States. And I will leave it to you, who have vastly superior understanding and knowledge of Brazil, to determine how my research may be applicable to Brazil.

Having said that, I think that there are at least three good reasons why research from the United States on the effects of public investment in early childhood education may be useful to Brazil in promoting development and in combating income inequality and poverty, especially childhood poverty. First, research from countries all around the world (such as Argentina, Bolivia, Chile, Columbia, Guatemala, India, Mexico, Peru, Turkey, and Brazil itself) has found, just as has U.S. research, that investment in early childhood development has significant benefits and is an effective way to combat poverty and promote development.

Second, the United States and Brazil both have a very serious problem with income inequality. For example, in the United States, the poorest 20% of households earn only about 1.5% of market income while the richest 20% earn about 55% of market income.

Third, many of our children, both in the United States and in Brazil, are in crisis. Although there are numerous ways to illustrate the problems confronting children in the United States, one good indicator of the magnitude of the crisis is the statistics on childhood poverty. In the United States, the youngest and most vulnerable children suffer the highest poverty rates of any age group. Fully 20% of all children under the age of 6, that is, one out of every five kids or about 5 million children, are living in poverty.

What this means is that many young children in the United States have inadequate access to food, clothing, shelter, health care, and clean, safe crime-free living environments. In addition, many children do not have access to high-quality educational opportunities and fall far short of achieving their academic potential while in school.

To make matters worse, poor children in the United States grow up into adults who are more likely to engage in crime, use drugs, abuse alcohol, neglect and abuse their own children, and suffer from poor health. Poor children who fail to achieve their full academic potential are more likely to enter adulthood without the skills necessary to develop into highly productive members of society able to compete effectively in a global labor market. Less skilled, less employed, less productive, and earning less, when these children become adults they will be less able to help us sustain our public retirement benefits systems and our economy. In short, the consequences of childhood poverty on our collective economic health and wellbeing as a community are profoundly negative and have long-term consequences.

There is hope, however. Recent studies of high quality early childhood development (ECD) programs have consistently found that investing in young children has significant benefits for children, their families, and society at large (including its taxpayers).

Let me provide you with a brief overview of the documented benefits of four early childhood development programs. If you want more detail about these ECD programs and their benefits I would invite you to take a look at a study I published last year entitled “Exceptional Returns.”

Assessments of well-designed and well-executed ECD programs have documented that participating children are more successful in school and in life after school than comparable children who are not enrolled in high quality programs. In particular, children who participate in

high quality ECD programs tend to have higher scores on achievement tests, have greater language abilities, have less grade retention, have less need for special education and other remedial coursework, have higher high school graduation rates, and higher levels of schooling attainment. Furthermore because of the health and nutrition services provided by high quality ECD programs, participating children have improved nutrition, better access to health care services, higher rates of immunization, better health, and experience less child abuse and neglect. These children are also less likely to become teenage parents and more likely to have higher employment rates as adults, higher earnings as adults, lower welfare dependency, lower rates of drug use, engage in fewer criminal acts both as juveniles and as adults, and lower incarceration rates.

Parents and families of children who participate in ECD programs also benefit. For example, mothers have fewer additional births, have better nutrition during pregnancy, are less likely to abuse or neglect their children, complete more years of schooling, have higher high-school graduation rates, are more likely to be employed, have higher earnings, engage in fewer criminal acts, have lower drug and alcohol abuse, and are less likely to use welfare.

Now, let me hasten to point out that ECD programs do not perform miracles on children. Substantial numbers of ECD participants do poorly in school, commit crimes, and have poor health outcomes. But, the key point is that children who participate in high-quality preschool programs as a group have far lower rates of these negative outcomes than do non-participants.

Four high-quality ECD programs have had carefully controlled studies with long-term follow-up of participants and a control group of non-participants: the Perry Preschool Project, the Prenatal/Early Infancy Project, the Abecedarian Early Childhood Intervention, and the Chicago Child-Parent Center Program. These programs used the gold standard in terms of methodology. They accepted a group of children into the study based on criteria such as age and low socio-economic status, and then randomly divided them into two roughly equal groups, only one of which participated in the preschool program while the other served as the control group. Researchers followed both groups of children over many years and measured a variety of life outcomes.

So, what are the outcomes that have been documented? Please note that researchers observed many benefits but I included only a few of them in the following tables.

Table 3 summarizes the statistically significant benefits of the Perry Preschool Project measured when the children were 27 years old. A more recent follow up measuring results when the children were 40 years old showed even greater benefits.

Table 4 summarizes the statistically significant benefits of the Prenatal/Early Infancy Project where the children were followed until age 15.

Table 5 summarizes the statistically significant benefits of the Abecedarian Early Childhood Intervention where the children were followed until age 21.

Table 6 summarizes the statistically significant benefits of the Chicago Child-Parent Center Program where the children are still being followed and these results are from the age 21 follow-up.

Benefit-cost ratios indicate the high value of these programs. As illustrated in **Figure 4.1**, analyses of these four high quality ECD programs have found benefit-cost ratios that varied from a minimum of 3.7-to-1 to a high of 8.7-to-1. The age 40 follow up for the Perry program calculated a benefit-cost ratio of about 17 to 1. In general, as the children age the benefits tend to grow relative to the costs. Now, for those of you who are not economists let me explain that investment in a project is justified if its benefit-cost ratio exceeds 1-to-1.

While participants and their families get part of the total benefits, it is noteworthy that the benefits to the public and government are larger and in and of themselves tend to far outweigh the costs of these programs. For example, a recent Federal Reserve Bank of Minneapolis study based on the age 27 follow up determined that annual real rates of return on public investments in the Perry Preschool ECD program were 12% for the non-participating public and government, and 4% for participants, so that total returns exceeded 16%. Thus, it is advantageous for non-participating taxpayers to pay for these programs. And, to comprehend how extraordinarily high these rates of return on ECD investments are, consider that the highly touted real rate of return on the U.S. stock market that prevailed over the past century was just 6.3%.

Government investments in ECD programs pay for themselves because the costs to government and taxpayers are outweighed by the budgetary benefits that the investments

eventually produce. **Figure 4.2** illustrates the benefit-cost ratio for three ECD programs assuming that all the costs are borne by government and taxpayers and taking into account only the benefits that generate budget savings for government. These ratios vary from a low of 2.5-to-1 to a high of 4.1-to-1. Again, the Perry numbers are from the age 27 follow up.

I have translated these benefit-cost ratios into estimates of how investments in ECD programs would affect future government finances, the economy and crime. For the purpose of this analysis, I assumed that a high-quality, publicly funded ECD program was established to serve all three and four year-old children in the United States who live in poverty. I then calculated the effects of such an ECD program on future government budgets, the economy, and crime.

Before I describe for you the results of my research I want to make explicit that I calculated the benefits of an ECD program that is for poor, three and four year-old children only. I did so because of some technical limitations in the data. But, I want to be clear, data available from many ECD programs shows that programs beginning during the prenatal months and continuing through age 6 have generated significant benefits. In addition, programs that have served children from all economic backgrounds have yielded excellent returns although returns appear to be greatest for the most disadvantaged children. Indeed, there is evidence that all children may benefit from enrollment in a high-quality ECD program. But, today I will be describing for you only some of the benefits of investing in poor, 3 and 4-year olds.

ECD investment benefits taxpayers and generates government budget benefits in at least four ways. First, subsequent public education expenses are lower because participants spend less time in school, as they fail fewer grades, and require expensive special education less often. Second, criminal justice costs come down because participants—and their families—have markedly lower crime rates. Third, both participants and their parents have higher incomes and, therefore, pay more taxes than non-participants. Fourth, ECD investment reduces public welfare expenditures because participants and their families have lower rates of welfare usage. Against these four types of budget benefits, we must consider two types of budget costs: the expenses of the ECD program itself and the increased expenditure on public education due to greater educational attainment by ECD participants.

**Figure 4.3** illustrates the budget effects through the year 2050 of launching a government financed high-quality ECD program immediately in the United States.

For the first decade and a half government outlays would exceed offsetting budget benefits, but by a declining margin. By the 17th year of the program, the deficit would turn into a surplus that would grow every year thereafter culminating in a large net budgetary surplus of some \$167 billion in 2050.

Savings to government are not the only benefits from ECD investments. These other benefits come in many forms but include positive impacts on earnings and on crime.

**Figure 4.7** illustrates the impact of ECD investments on earnings by showing the annual increase in earnings due to ECD investment as a percentage of GDP. The initial increase in earnings occurs in about 15 years when the first cohort of participating children turns 18 and enters the labor market. By 2050, the increase in earnings due to ECD investments is estimated to amount to over 0.4% of GDP. This amounts to about a \$50 billion increase in the income of the poor and represents about a 60% increase in their income. In other words, participation in a publicly financed preschool program may dramatically increase the income of the poor and reduce income inequality significantly. My estimate of wage gains among the poor are understated because it does not include the wage increases that will accrue to the parents of children in preschool programs.

Investments in ECD programs will also substantially reduce crime rates and the extraordinary costs to society of criminality. Some of these reduced costs are savings to government in the form of lower criminal justice system costs and were included in the earlier discussion of the budgetary effects of ECD investments.

But there are other savings to society from reduced crime including the financial losses that would otherwise be experienced by the victims of crime. **Figure 4.8** illustrates some of the annual benefits to individuals and to society from ECD induced reductions in crime. By 2050, the savings to individuals from less crime would amount to \$345 billion (\$127 billion in constant 2004 dollars). Including the savings to government, the savings to society from reductions in criminality would total \$422 billion in the year 2050.

## **Conclusion**

A high-quality, nationwide commitment to early childhood development in the United States would cost a significant amount of money up front, but it would have a substantial payoff in the future. Such a program would ultimately reduce costs for education, for criminal justice, and for welfare, and it would increase significantly income earned and taxes paid. Within about 17 years, the net effect on the budget would turn positive. Within 30 years, the offsetting budget benefits would be more than double the costs of the ECD program

The economic and social benefits from ECD investment amount to much more than just improvements in public balance sheets. Investing in young children has positive implications for the current generation of children, for future generations of children, and for earlier generations of children. The current generation of children will benefit from higher earnings, higher material standards of living and an enhanced quality of life. Future generations will benefit because they will be less likely to grow up in families living in poverty. And earlier generations of children, who are now working or in retirement, will benefit by being supported by higher earning workers who will be better able to financially sustain our public retirement benefit programs. In other words, solving the economic and social problems of our youth will simultaneously help provide lasting economic security to future generations, to us, and to our elderly.

Thus, research in the United States shows that investing in high-quality early childhood development programs improves the quality of life of millions of children, reduces crime, makes the workforce of the future more productive, strengthens the economy, and reduces income inequality. The bottom line is that the case for public investment in ECD is compelling.

Let me summarize a few potential lessons that may be learned from US research:

1. Quality matters. Smaller ratios of students to teachers are better than larger ratios. Likewise, the educational attainment of the teachers is important. It is especially useful to have teachers with specific training in early childhood education. In addition, the most effective programs provide health and nutrition services to children and parenting education classes to parents. It is believed that these health, nutrition, and parenting classes have helped to significantly reduce child abuse and neglect.

2. Investment in the poorest, most disadvantaged children have the largest long –run payoffs. So, if you have limited resources it may be most effective to spend them on the poorest children.

3. The research indicates that 2 years of preschool generates greater benefits than one year. But the majority of benefits occur in the first year. Again, if resources are limited it may be best to provide one high quality year of preschool rather than 2 medium quality years.

4. A political lesson from the US experience. It appears to be easier to get support for a universal preschool program than one targeted to just poor children even though the benefits are greatest for poor children.

5. Teacher job satisfaction improves student performance. Thus, improving teacher wages, fringe benefits, hours of work, degree of control, and promotional opportunities may improve students' performance.